2009 Energy Code Submittal Information

- **See the attached details**

Additional requirements

- The U-value of windows and doors shall be a minimum of .35...MEC 1322.1102 Table 1102.1.2 - Energy
- The foundation and rim joist insulation R-value may be reduce to R-5 instead of R-10 if all of the following items met...MEC 1322.1102 N1102.2.6.4 Exception – Energy

  - The insulation is located on the exterior or is integral to the foundation wall

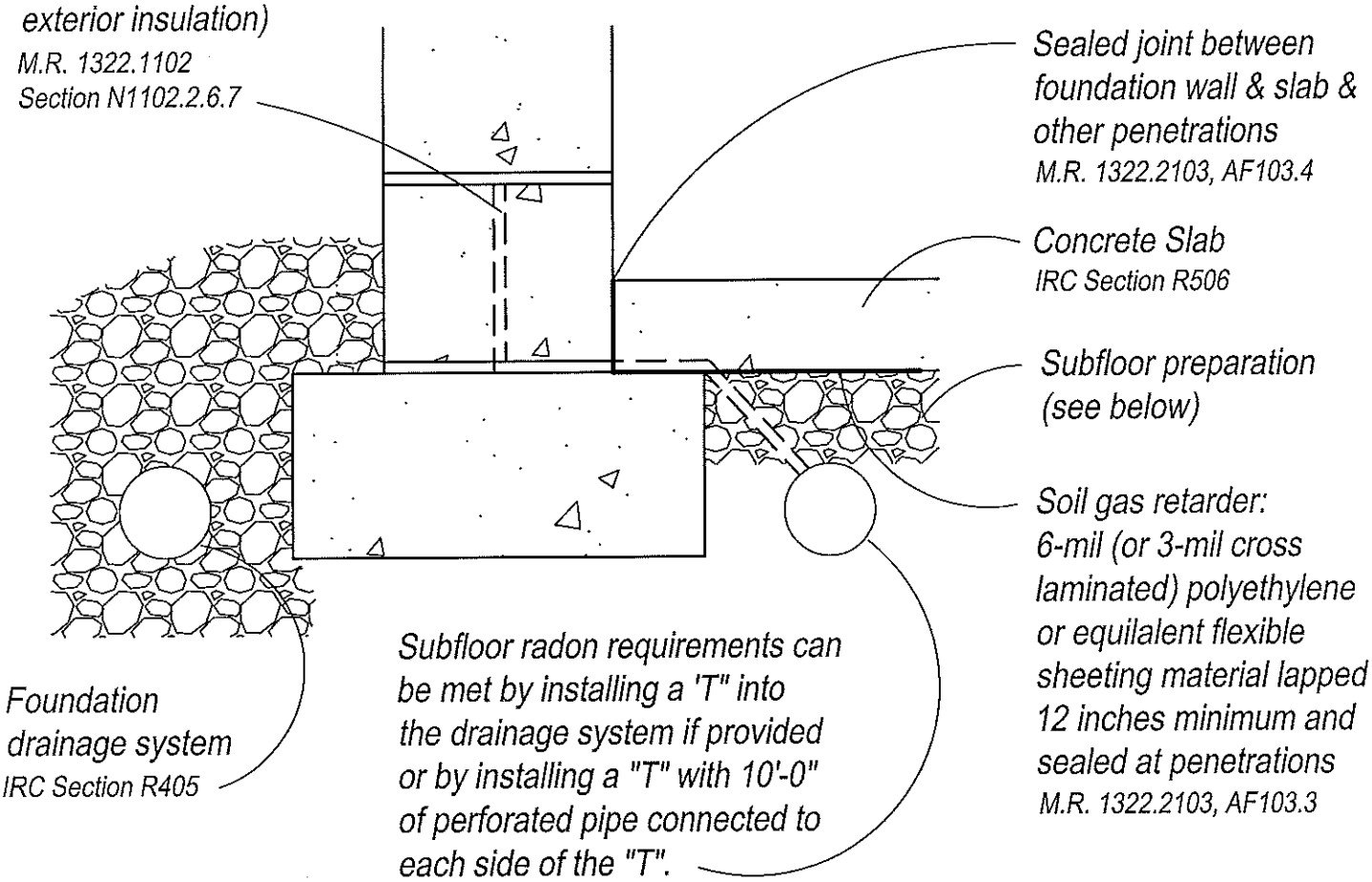
  - An additional R-5 insulation is added to the minimum attic R-value of R-38.

  - The heating system meets the minimum efficiency ratings in Table N1102.2.6.4

  - A minimum of a six-inch energy heel is used for the roof framing and or truss system.

- Vent pipe, 3 or 4 inch solid vertical ABS, PVC, or equivalent gastight pipe connected to a tee connection extending a min 10 feet in each direction...MEC 1322.2103 Section AF103.6.1 - Radon
- In active sub-slab depressurization (Active Radon)systems, when the radon vent pipes passes thru unconditioned spaces the pipe shall be insulated to a minimum of R-4...MEC 1322.2103 AF103.6.1 Exception - Radon

Subfloor Preparation Requirements

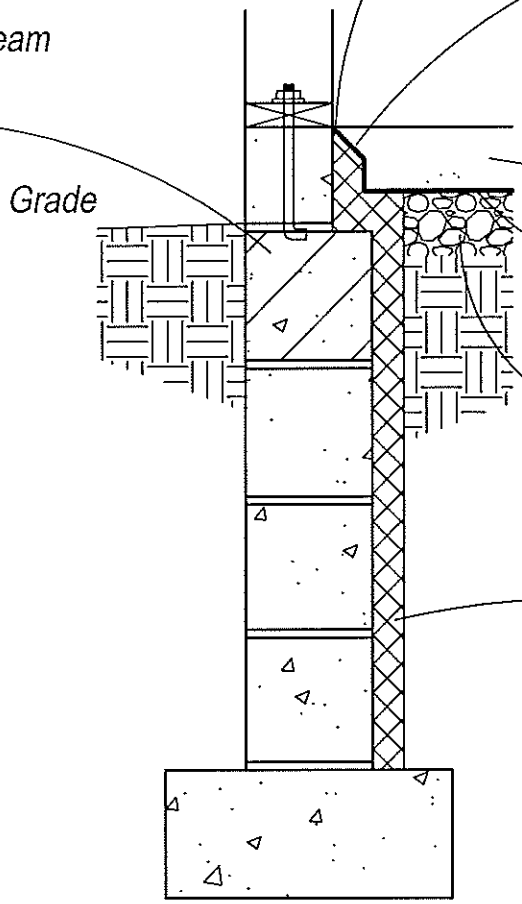


Sub-floor preperation shall consist of one of the following:

- *A uniform layer of clean aggregate, a minimum of 4" thick. The aggregate shall consist of material that will pass through a 2-inch sieve and be retained by 1/4-inch seive.*
- *A uniform layer of sand (native or fill), a minimum of 4 inches thick, overlain by a layer or strips of geotextile drainage matting designed to allow the lateral flow of soil gases.*
- *Other materials, systems, or floor designs with demonstrated capability to permit depressurization across the entire sub-floor area.*

M.R. 1322.2103 Section AF103.2

Slab on Grade & Walkout Foundations

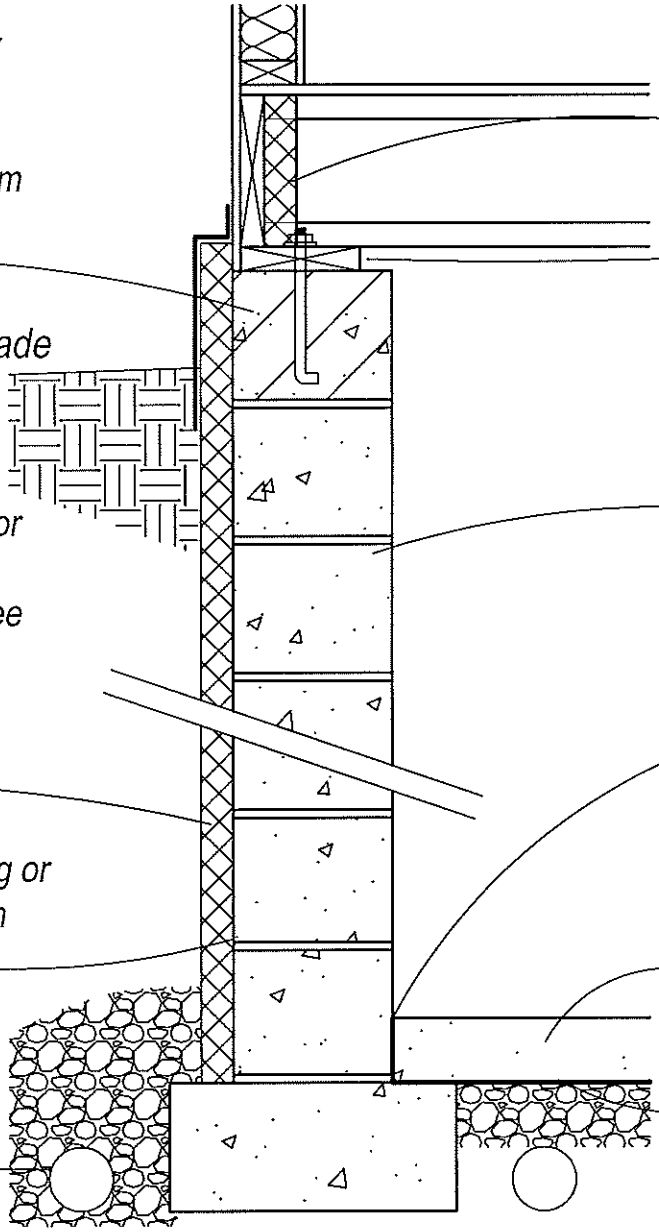


Slab-on-grade and basement walkout foundations shall comply with the following:

- *Wall insulation shall extend to the design frost line or top of footing, whichever is less.*
- *Top edge of the insulation installed between the exterior wall and the edge of the interior slab shall be permitted to be cut at a 45-degree angle away from the exterior wall.*

M.R. 1322 Section N1102.2.6.3

Exterior Rigid Insulation Requirements



Continuous course of
a. Solid block
b. Course of masonry grouted solid
c. Bond beam
d. Solid concrete beam
M.R. 1322.2103 Section AF103.3.4.5

Rigid exterior insulation system (For possible reduction in insulation R-value, see M.R. 1322.1102, N1102.2.6.4)
M.R. 1322.1102 Subp. 9, N1102.2.6

Exterior waterproofing or dampproofing system
IRC Section R406

Foundation drainage system
IRC Section R405

R-10 rim joist insulation
M.R. 1322.1102 Table N1102.1

Treated plate with anchor bolt and joist anchorage
IRC Section R404

Poured concrete or masonry block foundation wall
IRC Section R404

Sealed joint between foundation wall & slab & other penetrations
M.R. 1322.2103, AF103.4

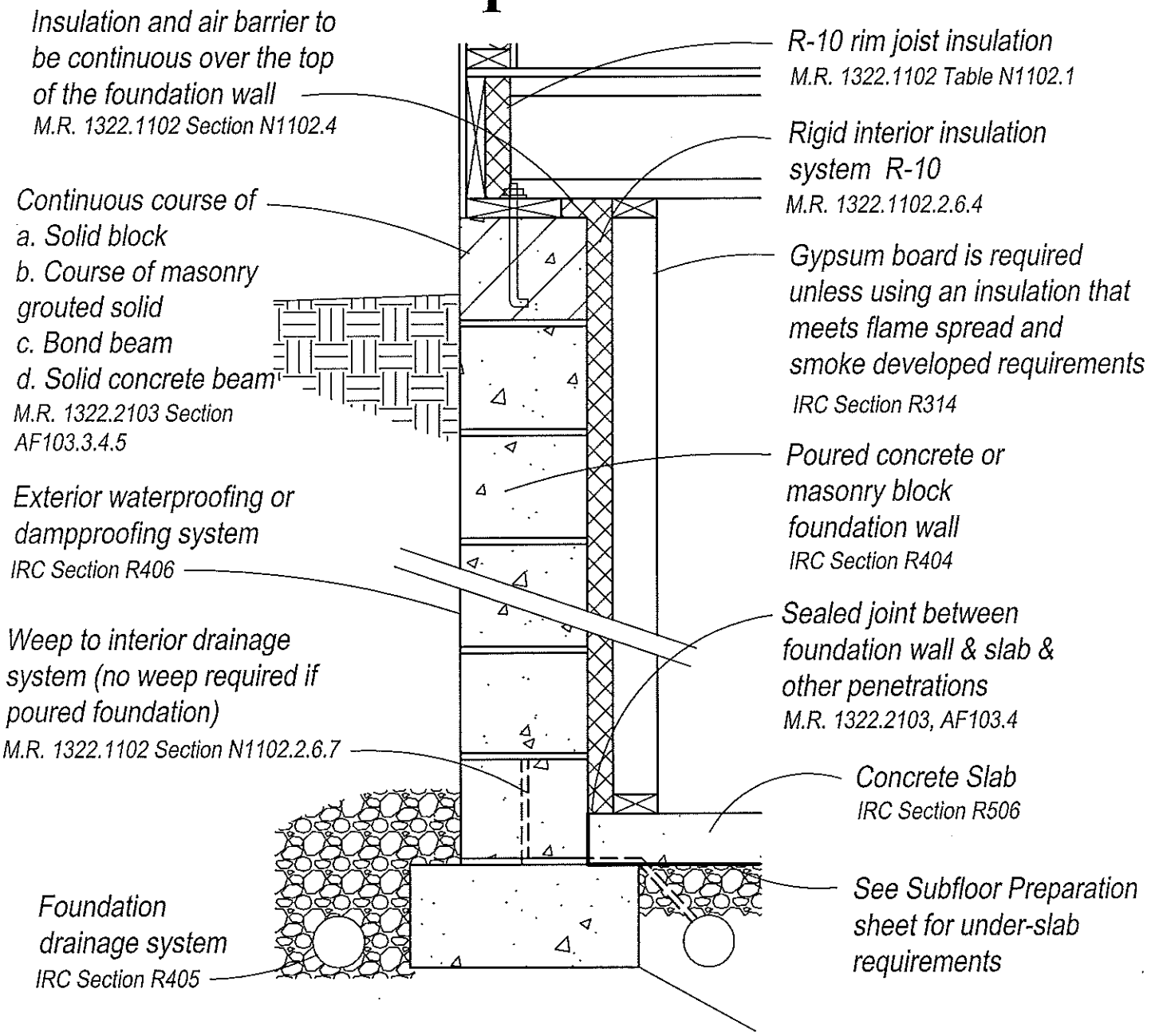
Concrete Slab
IRC Section R506

See Subfloor preperation sheet for under-slab requirements

Exterior insulation system shall:

- *Be of water resistant materials manufactured for its intended use;*
- *Be installed according to the manufacturer's specifications;*
- *Comply with either ASTM C578, C612, or C1029 as applicable;*
- *Have a rigid, opaque, and weather-resistant protective covering to prevent the degradation of the insulation's thermal performance. The protective covering shall cover the exposed exterior insulation and extend a minimum of 6 inches below grade. The insulation and protective covering system shall be flashed in accordance with IRC Section R703.8.*
  M.R. 1322.1102 Subpart 9, N1102.2.6

Interior Rigid Insulation Requirements

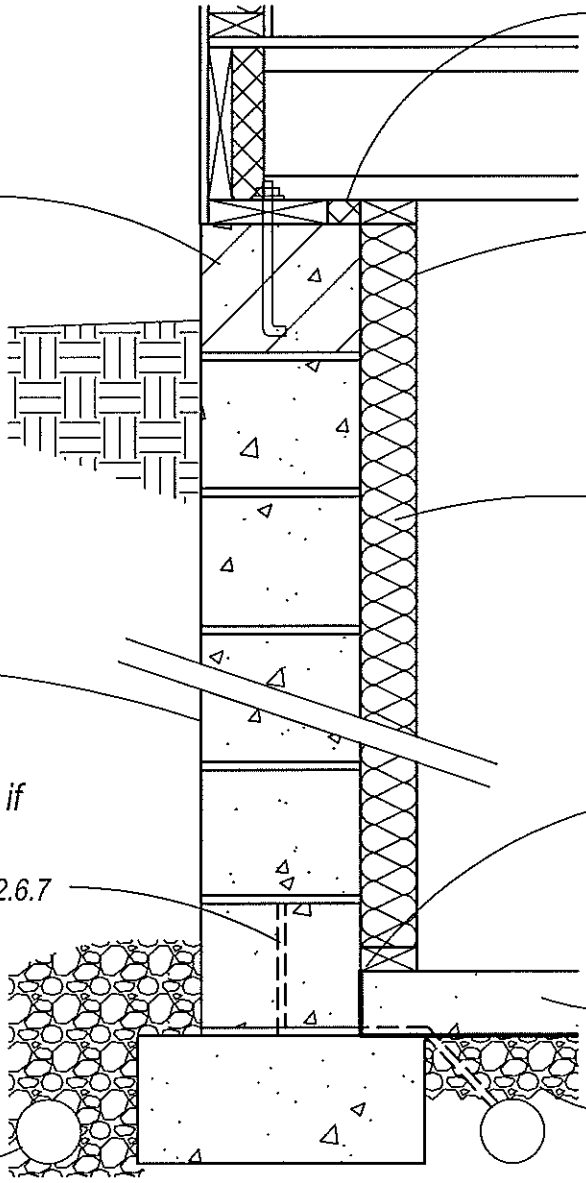


Rigid interior insulation shall comply with the following:

- *Either ASTM C578 or ASTM C1289.*
- *Damproofing, waterproofing, or a water repellent shall be applied to the exposed above grade foundation walls or a layer of damproofing or waterproofing shall be installed on the entire inside surface of the foundation wall, water proofing shall comply with ASTM E514.*
- *Must be in contact with the foundation wall surface. Vertical edges shall be sealed with accoustic sealant. All interior joints, edges and penetrations shall be sealed against air and water vapor penetration. There shall be horizontally continuous accoustic sealant between the foundation and insulation at the top of the foundation wall and between the basement floor and the bottom insulation edge. The insulation shall not be penetrated by the placement of utilities or by fasteners or connectors used to frame the wall.*

M.R. 1322.1102 Section N1102.2.6.7 & N1102.2.6.8

Interior Batt Insulation Requirements



Insulation and air barrier to be continuous over the top of the foundation wall
M.R. 1322.1102 Section N1102.4.1

Continuous course of
a. Solid block
b. Course of masonry grouted solid
c. Bond beam
d. Solid concrete beam
M.R. 1322.2103 Section AF103.3.4.5

Sealed air barrier material with a minimum permeance of at least 1 per ASTM E 96 procedure A
M.R. 1322.2103 Section N1102.2.6.7 & N1102.2.6.11

Friction-fit batt insulation with a minumum of R-10 up to R-13 applied flush with waterproofing
M.R. 1322.2103 Section N1102.2.6.7 & N1102.2.6.11

Exterior waterproofing or dampproofing system
IRC Section R406

Weep to interior drainage system (no weep required if poured foundation)
M.R. 1322.1102 Section N1102.2.6.7

Sealed joint between foundation wall & slab & other penetrations
M.R. 1322.2103, AF103.4

Concrete Slab
IRC Section R506

Foundation drainage system
IRC Section R405

See Subfloor preparation sheet for under-slab requirements

Unfaced fiberglass batt interior insulation shall comply with the following:

- *Waterproofing shall be applied to the entire inside surface of the foundation wall.*
- *The top and bottom plates must be air sealed to the foundation wall surface and the basement floor.*
- *An air barrier and vapor retarder material with a min. perm. rating of at least 1.0 in accordance with ASTM E96 proceedure A, shall be installed on the warm-in-winter side of the foundation insulation meeting the following: a) Air sealed to the framing with construction adhesive or equivalent at the top and bottom plates and where the adjacent wall is insulated. b) Air sealed utility boxes and other penetrations, and c) Up to R-13 batts are allowed. M.R. 1322.1102 Section N1102.2.6.7 & N1102.2.6.11*